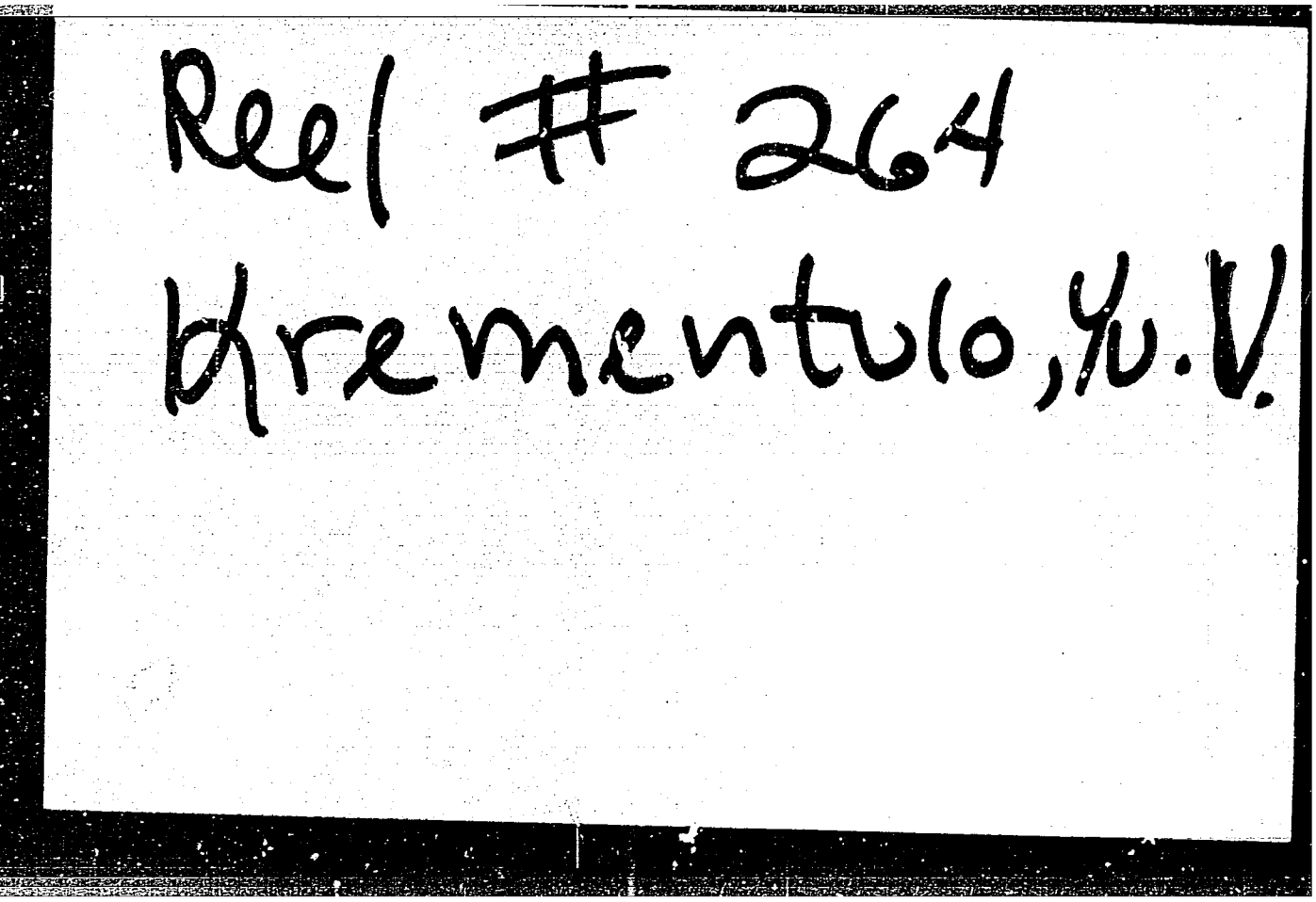


FD-1667

USSR/Electricity - Regulation
KREMENTULO, Yu. V.
Card 1/2 Pub. 10-3/11

Author : Nadzhafov, E. M.; Abdullayev, A. A.; and Krementulo, Yu. V. (Moscow)

Title : Experimental investigation of the self-excited oscillations in the internal circuit of a pneumatic regulator

Periodical : Avtom. i telem., Vol. 16, 27-42, Jan-Feb 1955

Abstract : The authors describe procedure and results of an experimental investigation of the internal circuit of the pneumatic regulator type 04. They point out the influence of hydraulic resistance and capacity of the feedback line, its coefficient of amplification (quantity proportional to the range of throttling), capacity at regulator output, supply pressure, regulator's output pressure, diameter of the nozzle of regulator's secondary relay, all namely upon the frequency and amplitude of self-excited oscillations and upon the character of the course of transient processes. They indicate the possibility of applying the self-excited oscillatory regimes of the pneumatic regulators for improving the transient process. Three references: V. L. Lossivevskiy, Principles of automatic regulation of technological processes (in Russian), Oborongiz (Defense Press), 1950. V. V. Solodovnikov, "Frequency method of analyzing the quality of automatic regulation systems," Osnovy avtomaticheskogo regulirovaniya (Principles of automatic

FD-1667

Card 2/2

regulation), editor V. V. Solodovnikov, Mashgiz (Machine Press), 1954.
V. V. Petrov and G. M. Ulanov, "Stabilization of nonlinear servomechanisms,"
ibid.

Institution : --

Submitted : June 16, 1954

KREMENTULO, Yu. V. (IAT AN SSSR)

"Construction of Electropneumatic Transformers."

report presented at the Scientific Seminar on Pnsumo-Hydraulic Automation,' 28-29 May 1957, at the Inst. for Automation and Remote Control (IAT), Acad. Sci. USSR

Avtomia i Telemekhanika, 1957, Vol. 18, No. 12, pp. 1149-1150, (author SEMIKOVA, A. I.)

SOV/102-58-4-2/11

AUTHOR: Ivanenko, V.I., Krementulo, Yu.V., and Pushchalovs'kiy, A.D.

TITLE: An Automatic Regulator for the Anticorrosion Potentials of Gas Mains

PERIODICAL: Avtomatika, 1958, Nr 4, pp 19-26 (UkrSSR)

ABSTRACT: The system uses a two-stage electronic amplifier followed by magnetic amplifiers to keep the potential of the pipe at a preset value. The steady-state and transient response characteristics are given. Graphs from which the regulator may be adjusted to work with a steady-state error below a set limit are also presented. The system has been tested for four months on the Rusheva-Kiev main gas line.
There are 9 figures and 4 references, 2 of which are Soviet, 1 Ukrainian and 1 collection of translations from foreign periodicals.

Card 1/1

ASSOCIATION: Instytut elektrotekhniky AN URSR
(Electro-technical Institute, Ac.Sc. Ukr.SSR)

KREMENTULAY Y.U.

28(1) PHASE I BOOK EXPLOITATION SOV/2702

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.
Seminar po pnevmogidravlicheskoy avtomatike. 1st, Moscow, 1957

Sistemy, ustroystva i elementy pnevmo- i gidroavtomatiki; (Pneumatic and Hydraulic Circuits, Devices, and Elements in Automation); Collection of Papers. Moscow, Izd-vo AN SSSR, 1959. 233 p. Errata slip inserted. 2,750 copies printed.

Resp. Ed.: M. A. Aizerman, Doctor of Technical Sciences, Professor; Ed. of Publishing House: A. A. Tal'; Tech. Ed.: P. P. Polyakova.

PURPOSE: This collection of papers is intended for scientific research workers and engineers in the field of design and construction of pneumatic and hydraulic equipment and accessories for automation.

COVERAGE: This collection contains papers read at the Seminar on Pneumatic and Hydraulic Devices for Automation, May 28, 1957. The collection is divided into the following three groups: 1) newly developed pneumatic and hydraulic units, transmitters and transducers, including regulating mechanisms, special-purpose devices, and auxiliary equipment and 3) elements of pneumatic and hydraulic devices for automation, such as controlled and permanent nozzles and diaphragms. No personalities are mentioned. References follow several of the papers.

Podgoretskiy, M. L., and E.M. Braverman. (Moscow). KEFeMA Three-Component Regulating Unit 30

Dvoretskiy, V.M. (Moscow). Small-size Hydraulic Regulating Unit. IAT AN SSR 57

Zasedatelev, S.M., and V.A. Bukhalis (Moscow). Problems in Constructing Primary Instruments -- Differential Pressure Transmitter With Pneumatic Force Compensation 61
This paper is a theoretical discussion of differential transmitters dealing with their sensitivity, errors, and reliability.

Krementulo, Yu. V. (Moscow). Electropneumatic Transducers, IAT AN SSSR 77

Dmitriyev, V.N. (Moscow). Static Characteristics of a Pneumatic Relay With Constant Pressure Drop in Nozzles 86
This paper discusses the static characteristics of a back-pressure type pneumatic relay with indicators that are not sensitive to minute gap changes.

Zasedateley, S.M., and V.A. Bukhalis (Moscow). Differential Pressure Transmitters With Pneumatic Force Compensation (Review of Non-Soviet Designs) 91

Tamm, V.P. (Moscow). General-purpose Hydraulic Power Servodrive 99

Arkhangel'skiy, A.P. Hydraulic Universal Variable-speed Transmission (UGP) 103
This paper describes an axial-piston variable-speed transmission. Its technical specifications and fields of application are discussed.

Babushkin, S.A. (Leningrad). Equations for a Stabilizing System With a Hydraulic Actuator Connected With a Control Device by Hydraulic Main Lines 112
Equations of the motion of the actuator piston and elements of the control device are given. Design examples are presented.

80172
S/102/59/000/02/007/011

16.9500

AUTHOR: Krementulo, Yu. V.

TITLE: "Tortilla-2", a Cybernetic "Turtle"

PERIODICAL: Avtomatika, 1959, Nr 2, pp 81-87 (UkrSSR)

ABSTRACT: This device is a development of Walter's "turtle"; it reacts to light, sound, obstacles, and state of its batteries (it seeks the charger when they are run down). Its memory has sufficient capacity to accommodate a conditioned reflex. The construction is fully illustrated by the figures. (Model 1 is described in 'Radio', 1958, Nr 3). There are 3 figures and 4 references, 3 of which are Soviet and 1 translated from English into Russian.

ASSOCIATION: Instytut elektrotekhniky AS UkrSSR (Electrical Engineering Institute, AS UkrSSR)

SUBMITTED: January 20, 1959.

Card 1/1

V.

KREMENTULO, Yu., inzh.

Adventures of "Tortila-2." Znan. ta pratsia no.4:20-21 Ap '59.
Znan. ta pratsia no.4:20-21 Ap '59. (MIRA 12:10)
(Cybernetics)

KREMENTULO, Yu.V. (Kiyev)

Electro-pneumatic transducers designed by the Institute of Automation and Telemechanics of the Academy of Sciences of the U.S.S.R. Avtom.i telem. 20 no.2:211-219 F'59. (MIRA 12:3)
(Automatic control) (Transducers)

AUTHOR: Krementulo, Yu. V. (Kyyiv)

TITLE: On the conditions of absolute invariance for open-loop impulse systems

PERIODICAL: Avtomatyka, no. 2, 1960, 3-19

TEXT: The author defines the conditions of invariance as those which are imposed on the dynamical equations of the regulation system and on fundamental disturbances, with which the error of the system is identically equal to zero, if at the moment of applying the disturbance the system is in a state of equilibrium. The case of open-loop impulse systems is considered, and it is shown that, by employing the conditions of invariance it is possible to synthesize a circuit of interpolators for program control systems. Various examples of synthesis are considered. A system of automatic control working from an interpolator is considered. It is shown that with a polynomial law of interpolation it is not necessary to employ special differentiators of the input signal

Card 1/2

On the conditions of absolute ...

in order to improve the dynamic properties of the system. The effect of introducing derivatives of the input signal may be obtained by means of appropriate changes in the structure (algorithm) of the interpolator, and in certain cases it is sufficient to make appropriate changes in the coefficients of the interpolating apparatus. Further examples are then considerd. There are 16 figures and 23 references: 20 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows. T.W. She, T.F. Calvert: Short-time memory devices in closed-loop systems, "Application and Industry", no. 21, 1955; D.F. Ford, T.F. Calvert: The application of short-time memory devices to compensate a design, Transactions of AIEE, pt II, 1954; H. I. Finden, B.A. Herlock: Inductosyn and its applications, "Journ. British Inst. Radio Engineers", v. 17, no. 7, July, 1957.

ASSOCIATION: Instytut elektrotekhniki AN USSR (Electrotechnical Institute, AS UkrSSR)

SUBMITTED: January 28, 1960

Card 2/2

S/102/60/000/002/008/008/XX
D251/D304

AUTHORS: Koval's'kyy, M.V., Krementulo, Yu. V., Reuts'kyy, V. Yu., and Shihov, B.O.

TITLE: A system of digital programming control of a milling machine with power step motors

PERIODICAL: Avtomatyka, no. 2, 1960, 81-83

TEXT: The article describes a bi-coordinate system of digital programming control for power step motors which was constructed in the Instytut elektrotekhniky AN URSR (Electrotechnical Institute of the AS UkrSSR). Details of the motor are given by B.O. Sihov (Ref. 1: Avtomatyka, no. 1, 1959). The program was written on punched type and is read off by a transmitter which works in synchronism with a linear interpolator. In the program are indicated the sign and quantity of the displacement with respect to the coordinates. The working of the system is possible both as an interpolator and as an intermediate memory. The programming scheme is constructed in the form of two separate blocs. In the first bloc

Card 1/2

S/102/60/000/002/008/008/XX
D251/D304

A system of digital ...

are the reading device, a ferrite-transistor computor and its feed. The overall dimensions of the bloc are 300x300x500 mm. In the second bloc is the power scheme of computation of the step motor; the overall dimensions being 300x500x800 mm. There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Instytut elektrotekhniky AN URSR (Electrotechnical Institute of the AS UkrSSR)

SUBMITTED: February 25, 1960

Card 2/2

KULIK, V.T. [Kulyk, V.T.]; KREMENTULO, Yu.V.

Review of IA.Z. TSypkin's book "Theory of Pulse Systems." (MIRA13:10)
Avtomatyka no.3:93-95 '60.
(Pulse techniques (Electronics))
(TSypkin, IA.Z.)

27136
S/102/61/000/004/002/004
D274/D302

16.4000 (1121, 1031, 1344, 1329)

AUTHOR: Krementulo, Yu.V., (Kyyiv)

TITLE: New form of non-absolute invariance condition for program control systems

PERIODICAL: Avtomatyka, no. 4, 1961, 21-34

TEXT: A new form of invariance condition is considered which permits reducing the error to an arbitrarily small value ε. The error is reduced by the method of changing the time-scale of the program. By using a variable (non-linear) time scale, the output program $\psi(t)$ can be transformed into another, $\psi_1(t)$. The change in time scale can be either rigid, or depend on the input parameters (velocity, acceleration, error) of the system. First, the simple case is considered of a time scale which is constant throughout the entire working cycle of the system; (ω_o = const $\neq$ f(T)). The system is described by expression

$$\varphi(p) = \frac{b_3(p)}{a_3(p)}\psi(p) = W(p)\psi(p), \qquad (9)$$

Card 1/6

New form of non-absolute invariance...

where $W(p) = b_3(p)/a_3(p)$ is the transfer function of the system with respect to the error. With a change in time scale $t = T/\omega_o$, one obtains

$$\varphi_1(p) = \omega_o W(p)\psi(\omega_o p) = W(p)\psi_1(p). \quad (11)$$

where $\varphi_1(p)$ is the system error (with the new time-scale) and $\psi_1(p) = \omega_o \psi(\omega_o p)$. In certain cases $\psi_1(p)$ can be represented in the form

$$\psi_1(p) = f(\omega_o)\psi(p). \quad (12)$$

In such cases, the error $\varphi_1(t)$ for the new program changes (at any given moment of time) by a factor of $f(\omega_o)$ with respect to the error $\varphi(T)$; thereby the error variation does not depend on the properties of the system (i.e. on $W(p)$), being determined by $\psi(T)$ only. An example is given which shows how a change in the time scale reduces the error by half. The majority of functions, however, cannot be represented by Eq. (12). Further, the error is considered for a system where Eq. (12) does not hold. Expanding the error φ in a finite series, and effecting a change of time scale, one reaches

Card 2/6

New form of non-absolute invariance...

the conclusion that by a change in time scale (by the factor ω_o), the "position" error remains unchanged, the velocity-error decreases by ω_o, the acceleration error by ω_o^2, etc. On variable time scales, assuming $\omega_o(T)$ as given, the relationship between t and T is derived:

$$t = \int_{T_o}^{T} \omega_o(T)dT + t_o. \qquad (25)$$

Other formulas are derived which show that the variable time-scale ω_o is nothing else but the rate of program input. As regards the variable time-scale $\omega_o = f(T)$, an example is given illustrating the use of a variable time-scale. This example shows that the smaller t_1 $(0 \leq t < t_1)$, the smaller the deviation from absolute invariance. The measure of deviation of the process from the ideal process, i.e. the measure of non-absolute invariance is given by

$$\Phi(p)-\Phi'_{1displ}(p)=\frac{k\tau}{p(\tau p+1)}-\frac{k\tau}{t_1 p^2(\tau p+1)}(1-e^{-pt_1})=\frac{k\tau}{p(\tau p+1)}\left(1-\frac{1-e^{-pt_1}}{pt_1}\right) \qquad (33)$$

Card 3/6

New form of non-absolute invariance...

(τ being related to the steady-state error). Systems with a variable time-scale are then examined. In the foregoing example, the time scale changed in accordance with a rigid program. There are systems, on the other hand, where the time scale changes as a function of input- and output parameters in accordance with the expression: $\omega_c = k(p)\Psi$ or $\omega_o = k(z)\Psi$. The operators k(p) and k(z) ought to be minimized, i.e. the problem reduces to choosing the optimum values of the operator coefficients, proceeding from a suitable quality criterion. The following criteria can be used: 1) the mean-square error for a given fixed time; b) the time of carrying out the program for a given mean-square error; c) the maximum of the absolute error for a fixed time; d) the time for carrying out the program for a given maximum of absolute error. On the dynamical equation of a system with a variable time-scale, for an open-loop system, the following equation is obtained:

$$\varphi_1(p) = W(p)L\left\{\Psi\left(\omega_{01}t + \int_0^t k(p)\varphi_1(t)dt\right)\right\}, \qquad (37)$$

Card 4/6

New form of non-absolute invariance...

In the general case, Eq. (37) cannot be solved. In the following, linear approximations to Eq. (37) are considered which makes it possible to estimate the equilibrium of the system in the small, (it is assumed that the operator k(p) is a linear differential operator). In order to find the stability conditions of the system, $\Psi(T)$ is expanded in a series, of which only the first term is retained; thereupon the characteristic equation of the system is derived (which yields the equilibrium conditions). Two examples are given. With regard to transient processes in a first-order system, ($\omega_o \neq$ const), a system with the following program is considered:

$$\Psi(T) = \begin{cases} \frac{A}{T_1} T & \text{for } 0 < T < T_1 \\ A - \frac{A}{T_2 - T_1}(T - T_1) & \text{for } T_1 < T < T_2 \\ 0 & \text{for } T_2 < T \end{cases} \qquad (45)$$

Three cases are discussed: a) ω_o linearly dependent on the error, b) - on the absolute error, c) ω_o depending on the squared error.

Card 5/6

27136
S/102/61/000/004/002/004
D274/D302

New form of non-absolute invariance...

It is shown that a time scale which depends on the squared error is most convenient. There are 5 figures and 3 Soviet-bloc references.

SUBMITTED: March 15, 1961

Card 6/6

KOVAL'SKIY, Nikolay Vladimirovich; KREMENTULO, Yuriy Vasil'yevich; REUTSKIY, Vadim Yefimovich; SIGOV, Boris Alekseyevich; IVAKHNENKO, A.G., red.; KOVAL'CHUK, A.V., red.; GUSAROV, K.F., tekhn. red.

[Numerical programmed control] TSifrovoe programmnoe upravlenie [By] N.V.Koval'skii i dr. Pod red. A.G.Ivakhnenko. Kiev, Gos. izd-vo tekhn. lit-ry USSR, 1962. 124 p. (MIRA 15:3)

1. Chlen-korrespondent Akademii nauk USSR (for Ivakhnenko).
(Machine tools--Numerical control)

3521h
S/102/62/000/001/004/007
D201/D303

16.8000 (1031,1132,1329)

AUTHOR: Krementulo, Yu. V. (Kiyev)

TITLE: Invariance condi ions for closed loop sampled-data systems

PERIODICAL: Avtomatyka, no. 1, 1962, 33-44

TEXT: The author tries to establish the conditions of absolute invariance for closed-loop sampled-data systems and to establish the specific properties of invariant systems. The system considered is one with a single-on-off element and continuous input feedforward and disturbance feeback. The method of analysis is as follows: Using the fundamental theorems of D-transformation the Laplace transformation of the considered coodinate is determined and knowing the expression for the equation of the coordinate x (or for the system error ε), the conditions of absolute invariance are obtained by putting $x(q)=0$ for a stabilizing system and $\varepsilon(q)=0$ for the follow up or programmed systems. The physical meaning of the condition of absolute invariance of the given sampled-data system means that the x-coordinates, obtained both owing to the direct effect of disturbance and

Card 1/3

Invariance conditions for ...

to compound feed forward, are equal to zero. It is also shown that a closed-loop on-off system with one on-off element may be absolutely invariant with respect to the given form of the signal. These conditions of absolute invariance depend both on ψ and f (f-disturbance effect, ψ - input effect). The invariance conditions for sampling intervals are determined next. Since in general, they also depend on f and ψ, to make them independent of ψ and f - fictitious coordinates $\frac{m}{K_1}$ X(q) and $\frac{1}{K_2}$ ε(q)

are introduced and conditions of invariance for sampling intervals are obtained therefore not for the controlled coordinate X(q) and error ε(q) but for the fictitious coordinates. This makes it possible to determine the transfer functions of compound feeds which would satisfy the condition of invariance for both sampling intervals and coordinates x and ε. It is concluded that in the case of a system with a non-ideal, real on-off element the method of connection of switching elements and the transfer functions of compound feeds remain the same, the only condition required being that the switching elements work in synchronization and produce pulses of the same form as the basic on-off element. There are 4 figures and

Card 2/3

S/102/62/000/001/004/007
Invariance conditions for ... D201/D303

11 references: 10 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: F. Tou, Digital Compensation for Control and Simulation, Proc. IRE, v. 45, no. 9, 1957.

SUBMITTED: September 30, 1961

Card 3/3

KOZUBOVSKIY, S.F. [Kozubovs'kyi, S.F.]; KREMENTULO, Yu.V. (Kiyev)

The Second All-Union Conference on the Theory of Invariance and Its Application in Automatic Control Systems held in Kiev during May 29,- June 1, 1962. Avtomatyka 7 no.5:70-73 '62. (MIRA 15:11)
(Kiev--Congresses) (Automatic control--Congresses)

KUNTSEVICH, V. M.; KREMENTULO, Yu. V.

"Invariancy Theory for Self-Adjusting (pulse) Systems."

Paper to be presented at the IFAC Congress held in Basel, Switzerland, 27 Aug to 4 Sep 63

VORONOVA, L.I. (Kiyev); KREMENTULO, Yu.V. (Kiyev)

Schematic of a system for converting an angle of rotation into impulses sensitive to the direction of the rotation. Avtomatyka 9 no.3:54-57 '64. (MIRA 17:7)

VORONOVA, L.I. (Kiyev); KREMENTULO, Yu.V. (Kiyev)

Converters of discrete magnitudes to continuous ones using alternating current. Avtomatyka 8 no.6:81-83 '63. (MIRA 17:8)

L 30110-65 EWT(d)/EWP(1) Pc-4/Pq-4/Pg-4/Pk-4/Pl-4 IJP(c) GS/BC

ACCESSION NR: AT5004127 S/0000/64/000/000/0356/0366

AUTHOR: Krementulo, Yu. V.

TITLE: Conditions of invariance for closed pulse systems

SOURCE: Vsesoyuznoye soveshchaniye po teorii invariantnosti i yeye primeneniyu v avtomaticheskikh sistemakh. 2d, Kiev, 1962. Teoriya invariantnosti v sistemakh avtomaticheskogo upravleniya (Theory of invariance in automatic control systems); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 356-366

TOPIC TAGS: invariance theory, automatic control system, digital computer, servosystem, linear differential equation

ABSTRACT: This article investigates pulse systems with compounding and correcting connections as well as analogous continuous systems. Both the general characteristics of these two different classes of systems and their specific peculiarities are explained. The author first determines the equations of multiloop pulse systems in operator form. He then examines pulse systems with continuous compounding connections. An automatic control system is examined which is written in operator form by a system of linear equations. From this, the author determines the condition of absolute invariance and the conditions of invariance for discrete moments

Card 1/2

L 30110-65

ACCESSION NR: AT5004127

of time. From the equations obtained he finds the transfer functions of continuous compounding connections. The author concludes with an examination of pulse systems with pulse-continuoue compounding connections. Orig. art. has: 4 figures and 36 formulas.

ASSOCIATION: None

SUBMITTED: 24Sep64 ENCL: 00 SUB CODE: IE, DP

NO REF SOV: 008 OTHER: 001

Card 2/2

L 38726-66 EWT(d)/EWP(1) IJP(c)

ACC NR: AP6013099 SOURCE CODE: UR/0102/66/000/002/0003/0007

AUTHOR: Voronova, L. I. (Kiev); Krementulo, Yu. V. (Kiev)

ORG: None

TITLE: A new method for determining the dynamic characteristics of automatically controlled members

SOURCE: Avtomatyka, no. 2, 1966, 3-7

TOPIC TAGS: dynamic system, simulation test, analog computer, first order differential equation, second order differential equation, algebraic equation, INTEGRATION

ABSTRACT: The authors discuss three types of methods for determining the characteristics of dynamic systems: 1. the statistic method; 2. methods dealing with integration of differential equations by terms; 3. adjustable models. The second method is considered by the authors. It is assumed that a dynamic system is described by the linear differential equation

$$\sum_{i=0}^{n} a_i \frac{d^i y(t)}{dt^i} = x(t) + \sum_{j=1}^{m} b_j \frac{d^j x(t)}{dt^j}.$$

This expression may be used to determine any unknown coefficient when others are known. Certain difficulties are encountered which are related to the necessity of different-

Card 1/2

iating the input x(t) and the output y(t) signals of the system. This difficulty can be eliminated by n-fold integration of the expression over the range t-τ, t. It is obvious that this method is useful for determining a large number of coefficients a_i, b_j. For the case where it is necessary to determine k coefficients, integration of this expression (n+k-1) times gives a system of algebraic equations with respect to the unknown coefficients. Three methods are given for expansion of this expression into a system of (n+m+1) equations: 1. n-fold integration of the expression for (n+m+1) equal intervals; 2. increasing the multiple of integration of the differential expression from n to 2n+m with invariant limits of integration; 3. n-fold integration of the differential equation for (n+m+1) intervals of a given length. Systems of equations are given for each one of these three cases. The proposed method for determining the coefficients is used for members which are described by certain nonlinear ordinary and partial differential equations. The method is also applicable to multidimensional members. Experimental verification of this method was carried out on an MNB-1 type analog device for members described by the first and second order differential equation. The coefficients for those types of elements are given. Orig. art. has: 4 figures, 6 formulas.

SUB CODE: 12/ SUBM DATE: 17Jun65/ ORIG REF: 000/ OTH REF: 004

L 04989-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD
ACC NR: AT6016437 (A) SOURCE CODE: UR/0000/65/000/000/0165/0184

52
B+1

AUTHOR: Kuntsevich, V. M.; Krementulo, Yu. V.

ORG: none

TITLE: The theory of invariance of pulsed and self-adjusting pulsed systems

SOURCE: International Federation of Automatic Control. International Congress, 2d, Basel, 1963. Diskretnyye i samonastraivayushchiyesya sistemy (Discrete and adaptive systems); trudy kongressa. Moscow, Izd-vo Nauka, 1965, 165-184

TOPIC TAGS: self adaptive control, self organizing system, automatic control theory, nonlinear automatic control system

14

ABSTRACT: This is a comprehensive study of the problem of invariance in pulsed systems. Until recently the theory of invariance has been widely used only for ordinary systems of continuous action control. Since self-adjusting systems are a special class of nonlinear systems the introduction of compounding connections with respect to perturbations makes it possible both to improve quality and to extend the stability regions of these systems. Methods of analyzing and constructing pulse systems, enabling errors to be eliminated may serve as the basis for constructing control systems of substantially greater accuracy than present ones. In their

Card 1/2

L 04989-67
ACC NR: AT6016437

exposition, the authors make the following limitations and assumptions: (1) synchronous AM pulsed systems, (2) pulse repetition interval is constant, (3) pulse element has ideal characteristics, (4) equations are recorded in their variations, and (5) initial conditions are zero. The paper deals with pulsed systems (equations of multicircuit pulsed systems, pulse systems with continuous and with discrete compounding connections, and pulsed-continuous compounding systems) and extremal pulsed systems (systems without compounding connections, invariance of extremal control systems with indirect compounding connections), giving four examples of different types of systems. Orig. art. has: 71 formulas and 6 figures.

SUB CODE: 09/ SUBM DATE: 29Sep65/ ORIG REF: 021/ OTH REF: 010
13/

Card 2/2

ACC NR: AT6034740 SOURCE CODE: UR/0000/66/000/000/0082/0101

AUTHOR: Voronova, L. I.; Krementulo, Yu. V.

ORG: none

TITLE: A new method of determining the characteristics of complex dynamic systems

SOURCE: AN UkrSSR. Slozhnyye sistemy upravleniya (Complex control systems). Kiev, Naukova dumka, 1966, 82-101

TOPIC TAGS: dynamic system, linear differential equation ~~system~~

ABSTRACT: Among the numerous methods of determining the characteristics of systems from data on their normal operation there is a class of methods based on direct integration of differential equations. This article proposes a new method: the method of integrating a sliding band. The applicability of the method to complex systems which may be described by linear differential equations is examined. Before proceeding to its analysis the authors dwell on a brief description of existing methods in this class. It is concluded that the method of repeated integration of a sliding band makes it possible to determine the degree of the differential equation of the linear dynamic systems and the numerical value of its coefficients. The method is applicable to defining the characteristics of linear systems with variable parameters. Additive noise whose average value in the $(t-\tau, t)$ range in zero introduces no errors into the

Card 1/2

ACC NR: AT6034740

coefficients which are being determined. All that the states discussed may be applied to complex linear systems with several inputs and outputs. In the sliding (or moving) interval (t-τ, t) the current time is represented by t, while τ is a constant. All systems treated may be described by the following equation:

$$\sum_{i=0}^{n} a_i \frac{d^i y(t)}{dt^i} = \sum_{j=1}^{m} b_j \frac{d^j x(t)}{dt^j} + x(t), \quad n \geqslant m,$$

where x(t) is the input signal and y(t) is the output signal of the system. This is integrated n times within (t-τ, t) and the analysis is continued. Orig. art. has: 37 formulas and 8 figures.

SUB CODE: 09, 12/ SUBM DATE: 23Feb66/ OTH REF: 004

Card 2/2

UDOVICHENKO, G. (g.Minsk); KREMER, A. (g.Minsk)

Train and trust. Kryl.rod. 11 no.11:17 N '60. (MIRA 13:10)

1. Nachal'nik TSentral'nogo aerokluba Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu Belorusskoy SSR (for Udovichenko).
2. Predsedatel' soveta Belorusskogo TSentral'nogo aerokluba (g.Minsk) (for Kremer).

(Minsk--Gliding and soaring)

KREMER, A.V. (Leningrad)

Modifications of composition of peripheral blood in neurasthenia.
Klin.med. 32 no.9:85-89 S '54. (MLRA 7:12)

1. Iz kafedry fakul'tetskoy terapii (zav. prof. T.S.Istamanova)
I Leningradskogo meditsinskogo instituta imeni akad. I.P.Pavlova.
(NEURASTHENIA, blood in,
picture)
(BLOOD, in various diseases,
neurasthenia)

KREMER, Aleksandr Yakovlevich, kand. med. nauk; DEMIDOVA, A.M., red.; BALDINA, N.F., tekhn. red.

[Nocturnal enuresis]Nochnoe nederzhanie mochi. Moskva, Medgiz, 1962. 19 p. (MIRA 15:12)

(URINE—INCONTINENCE)

KREMER, B.

Theoretical discovery in 1865 of the Franz Josef Land. Mor. flot 15 no.6:27 Je '55. (MLRA 8:8)

1. Deystvitel'nyy chlen Geograficheskogo obshchestva SSSR.
(Franz Josef Land)

KREMER, B. A.,

"How the Existence of Franz Joseph Land was predicted," Chronicles of the North; Yearbook of Historical Geography, History of Geographical Discoveries and Exploration of the North) v. 2, Moscow, Geografgiz, 1957. 279 p. (Akademiya nauk SSSR. Kommisiya po problemam Severa).

Editorial Board: Andreyev, A. I., Belov, M. I., Burkhanov, V. P., Yefimov, A. V. (Resp. Ed.), Chernenko, M. B. (Deputy Resp. Ed.) and Shcherbakov, D. I.; Ed.: Vorontsova, A. I.; Tech. Ed.: Kosheleva, S. M.: Map. Ed.: Mal'chevskiy, G. N.

PURPOSE: The book is intended for readers interested in the Soviet Arctic.

COVERAGE: The present volume, the second of a series of three, is a collection of 27 articles by various authors presenting an historical account of the exploration and economic development of the Soviet North.. A small part of the book is devoted to Arctic areas beyond the confines of the Soviet Union. The aim of the book is to contribute to an understanding of the physical geography, cartography, ethnography, and economy of the Soviet North through a historical survey of these factors. A large number of authors explorers, scientists, travellers, pilots, navigators, etc. are cited.

KREMER, B.A.

Total area and the number of islands in Franz Josef Land. Probl. Arkt.i Antarkt. no.2:105-106 '60. (MIRA 13:6)
(Franz Josef Land)

KREMER, B.A. (Moskva)

"Life and scientific career of E.V.Toll'" by P.V. Vittenburg. Reviewed by B.A. Kremer. Priroda 50 no. 2:121-122 F '61. (MIRA 14:2)

(Toll', Eduard Vasil'evich, 1858-1902)
(Vittenburg, P.V.)

KREMER, B.A.

N. G. Shilling and the exploration of the Arctic Ocean. Izv. Vses. geog. ob-va 93 no.2:171-173 Mr-Ap '61. (MIRA 14:4)
(Shilling, Nikolai Gustavovich, 1828-1910)
(Artic Ocean--Discovery and explcration)

KREMER, B.

"The North Pole" by A.F.Laktionov. Reviewed by B.Kremer. Izv.Vses. geog.ob-va 93 no.3:274-275 My-Je '61. (MIRA 14:5)
(North Pole)
(Laktionov, A.F.)

KREMER, B.A.

"Discovery" of the North Pole and Robert Peary. Let. Sev. 3:276-278 '62. (MIRA 15:8)

1. Glavnoye upravleniye Severnogo morskogo puti.
(North Pole) (Peary, Robert Edwin, 1856-1920)

KREMER, B.A. (Moskva)

North Pole 1. Priroda 51 no.6:60-65 Je '62. (MIRA 15:6)
(Arctic regions--Drifting ice stations)

KREMER, B.A.

Arctic in the first volume of the "Concise geographic encyclopedia." Probl. Arkt. i Antarkt. no.13:131-133 '63. (MIRA 16:9)
(Arctic regions)

KORYAKIN, Sergey Fedorovich, kand. ekon. nauk, dots.; BERGSHTEYN, Iosif L'vovich, kand. ekon. nauk, dots.; Prinimal uchastiye: ELLINSKIY, Yu.P., st. prep.; CHERABSHTEYN, Ye.A., dots., retsenzent; CHERKASOV-TSIBIZOV, A.A., st. prepod., retsenzent; MILYUKOV, M.A., st. prepod., retsenzent; MOZHAROV, N.D., kand. ekon. nauk, retsenzent; MAKAL'SKIY, I.I., kand. ekon. nauk, retsenzent; KREMER, B.A., inzh., retsenzent; PETRUCHIK, V.A., kand. ekon. nauk, red.; GUBERMAN R.L., kand. ekon. nauk, red.; RODIN, Ye.D., kand. ekon. nauk, red.; DUBCHAK, V.Kh., inzh., red.; MARTIROSOV, A.Ye., inzh., red.; PALYUSHKIN, V.A., inzh., red.; BELOV, M.I., doktor geogr. nauk, red.; SINITSYN, M.T., inzh., red.; KOLESNIKOV, V.G., kand. tekhn. nauk, red.; ZAMAKHOVSKIYA, A.G., kand. ekon. nauk, red.; KUZ'MIN, T.P., inzh., red.; NEMCHIKOV, V.I., kand. tekhn. nauk, red.; GEKHTBARG, Ye.A., inzh., red.; FILIPPOV, K.D., red.; KRUGLOVA, Ye.M., red.

[Economics of the merchant marine] Ekonomika morskogo transporta. Izd.2., perer. i dop. Moskva, Transport, 1964. 527 p. (MIRA 18:1)

KREMER, B.A., pochetnyy polyarnik

Ivan Dmitrievich Papanin; 1894 - ; on his 70th birthday.
Meteor. i gidrol. no.12:56-57 D '64 (MIRA 18:1)

KREMER, D.M.

Determining the rated current of a group of oil-field electric-current receivers by means of the spectral decomposition of stationary random functions. Izv. vys. ucheb. zav.; neft' i gaz 8 no.6:38 '65.
(MIRA 18:7)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.

KREMER, G., inzh.

Armor made of liquid. Nauka i zhizn' 28 no.12:21 D '61. (MIRA 15:2)

(Petroleum conservation)

KREMER, H.

Contributions to the processing and heat treatment of spiral springs in band production. p. 24.

METALURGIA SI CONSTRUCTIA DE MASINI

Vol. 8, no. 3, Mar. 1956

Rumania

Source: EAST EUROPEAN LISTS Vol. 5, no. 10 Oct. 1956

KREMER, H. ; SUCIU, I.

Semicontinuous founding of aluminum and its alloys. p. 1076.
Conference on the problem of suing radioactive isotopes in USSR iron metallurgy. p. 1113.
Czechoslovak exhibition of industrial products. p. 1113.
Conference on welding held at Halle, German Democratic Republic. p. 1115.

METALURGIA SI CONSTRUCTIA DE MASINI. (Ministerul Industriei Metalurgice si Constructiilor de Masini si Asociatia Stiintifica a Inginerilor si Tehnicienilor din Romina) Bucuresti, Rumania. Vol. 5, no. 12, Dec. 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 6, June 1959

Uncl

L 33141-66 EWP(c)/EWP(v)/EWP(k)/EWP(h)/EWP(t)/ETI/EWP(l) IJP(c) JD/EM

ACC NR: AP6024571 SOURCE CODE: RU/0017/65/000/003/0135/0138

AUTHOR: Maniu, Al. (Engineer); Kremer, H. (Engineer)

ORG: [Maniu] Polytechnical Institute, Brasov (Institutul Politehnic); [Kremer] "METROM" Works, Brasov (Uzinele "METROM")

TITLE: Manufacture of converter blades

SOURCE: Metalurgia, no. 3, 1965, 135-138

TOPIC TAGS: petroleum industry, petroleum engineering

ABSTRACT: A discussion of the technical conditions and manufacturing technology of converter blades for the oil industry made of AM-63, with emphasis on the methods and conditions used at the Metrom Works of Brasov. Orig. art. has: 4 figures and 1 table. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 13, 05 / SUBM DATE: none

Card 1/1 UDC: 665.54.041.498:66.063

KREMER, I. Ya.

CIRCUITS & CIRCUIT ELEMENTS

"Certain Features of Transients in Tuned Amplifier with Nonlinear Load" by I.Ya. Kremer, Radiotekhnika, No 8, August 1957, pp 59-65.

Tuned amplifiers with specially introduced nonlinear loads are used in receiver with logarithmic amplitude characteristics (logarithmic receivers), which are used in radar stations as a means for increasing the noise rejection and of improving certain other characteristics of the radar receivers. The characteristic features of the transients in such a receiver are the dependence of the signal delay and of the output voltage rise time on the level of the unput signal. This article deals with the effect of these characteristics on the accuracy of radar sets.

Card 1/1

KREMER, L. A.

The Taghil cattle Moskva, Sel'khozgiz, 1949. 340, 2 p. (55-40907)

SF196.R8U78

KREMER, M.

KREMER, M. Stockpiling problems for companies. p. 15.

Vol. 10, No. 10, Oct. 1956.
TOBBTERMELES
TECHNOLOGY
Budapest, Hungary

So: East European Accession, Vol. 6, No. 2, Feb. 1957

KREMER, M. A.

USSR/Miscellaneous-Metallurgy

Card 1/1

Authors : Kremer, M. A., and Dudoreva, V. N.

Title : Determination of the delivery coefficient of pouring-systems (foundry) for steel profile casting

Periodical : Lit. Proizv. 1, 17 - 23, Jan-Feb 1954

Abstract : The work described in this report is only the first attempt to obtain data for the calculation of the delivery coefficient of casting-systems for the casting of steel, not through neutralization of the empirical results of mold-filling or by studying the flow processes of liquid steel in experimental tests but by direct observation of the motion of the liquid (smelted) steel in the mold-channels. Only through further experimentation and development of mathematical methods will it be possible to form a scientific basis for the design of pouring-systems for steel casting. Four references. Table, graphs.

Institution: ....

Submitted : ....

KREMER, M.A.

PHASE I BOOK EXPLOITATION 899

Mekhanizatsiya i avtomatizatsiya liteynogo proizvodstva (Mechanization and Automatic Control of Founding Processes) [Leningrad] Lenizdat, 1957. 224 p. 3,000 copies printed.

Ed.: (title page): Sokolov, A.N.; Ed.: (inside book): Yemel'yanova, Ye. V.; Tech. Ed.: Rodchenko, N.I.

PURPOSE: This book is intended for engineers and technical personnel working in the founding industries.

COVERAGE: The book presents experience gained by several Leningrad plants in the field of mechanization and automation of metal casting processes. It is stated that in total production of castings the Soviet Union is catching up with the U.S.A., and in production of steel castings the USSR is already leading. Soviet production of castings in 1955 amounted to 11 million tons, 2 million of which were steel castings. No personalities are mentioned. There are 33 references, 29 of which are Soviet, 3 English, and 1 German.

Card 1/3

TABLE OF CONTENTS:

Foreword 3

Sverdlov, B.I. Mechanization of Founding in Leningrad Plants 7

Kremer, M.A., and Shub, I.Ye. Experience Casting Steel Fittings in Shell Molds 22

Ivanov, Ye. K., and Mednikov, F.G. Pressure Casting of Steel 44

Dityatkovskiy, Ya. M., and Saukov, M.K. Centrifugal Casting of Large Cylindrical Parts From High-alloy Steel 61

Lebedev, K.P. Centrifugal Casting of Large Bushings From Copper Alloys 73

Belousov, N.N., and Dodonov, A.A. Vacuum Casting of Non-ferrous Alloys 95

Mechanization and Automatic (Cont.) 899

Shanskiy, K.I., and Vyaz'menskiy, A.S. Casting of Crane Drums from Cast Iron With Reduced Allowances for Machining 120

Desnitskiy, V.P. Modern Steel Casting Techniques in the Manufacture of Power Plant Machinery 139

Kononov, M.N. Improvements in Casting Fittings at the Plant imeni Lepse 160

Volynskiy, V.L. Mechanization and Improvements in Casting Methods at the "Lenstankolit" Plant 184

El'tsufin, S.A. Mastering Precision Casting of Turbine Blades 196

Yegorov, V.S. Lost Wax Method of Casting Metal Cutting Tools at the Sestrovetsk Plant imeni Voskov 211

AVAILABLE: Library of Congress (TS 233.S6)

Card 3/3 - GO/nah
12-12-58

KREMER, M.A.

28(1);25(1) PHASE I BOOK EXPLOITATION SOV/2831

Mekhanizatsiya i avtomatizatsiya trudoyemkikh protsessov v liteynom proizvodstve (Mechanization and Automation of Labor-consuming Processes in Foundry Practice) Moscow, Mashgiz, 1959. 226 p. Errata slip inserted. 4,000 copies printed.

Reviewer: K. N. Skobnikov, Candidate of Technical Sciences; Ed. (Title page): G. I. Kobylyanskiy (Deceased); Ed. (Inside book): A. N. Sokolov, Candidate of Technical Sciences; Tech. Ed.: O. V. Speranskaya; Managing Ed. for Literature on the Technology of Machinery Manufacture (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: The book is intended for technical personnel in foundries and engineers engaged in the mechanization and automation of industrial processes. It may also be used by students of institutions of higher technical education.

COVERAGE: The book deals with recent achievements in the mechanization and automation of time-and labor-consuming operations in foundries. Specific instances of mechanization and automation of foundry processes are described. The material presented in this book is divided into six parts, dealing with the following subjects: molding materials, mold and coremaking, casting, shakeout of molds, finishing of castings, and special casting methods. Each part consists of a number of technical papers presented by several authors. The application of automation ranges from the preparation of molds and cores to the mechanization and streamlining of specialized casting methods, such as investment casting and the use of shell molds. There are numerous diagrams showing automatized and mechanized installations in foundries. Most of the material is based on experiments and work done at the "Krasnyy Aksay" Plant. Some of the methods described appear to be in the experimental stage at that plant. The technical papers published in this book were originally presented at a technical conference of the Soviet machine industry in October 1957. No personalities are mentioned.

Kril'shteyn, L. M. Production of Sand Molds by Hydraulic Pressing 78

Kiselev, V. A. Mold Making With a Sand Slinger in Steel Foundries 79

Veselova, A. I. Transport and Distribution of Rapid-drying Waterglass Compounds to Tanks 33

Smirnov, F. I. Mechanization of Shell-mold Casting 212

Speranskiy, G. M. Use of High-frequency Electric Heating for Bonding Shell Mold Halves 216

Myasarskiy, V. S. Overall Automation of Mixing Systems in Foundry Shops 40

Zaygerov, I. B., A. M. Gvozdovich, and I. S. Gardelevich. Mechanization of Canting and Extraction Operations to Remove Cores From Flasks in Pneumatic Ramming 97

Kremer, M. A. and M. A. Bakhromeyev. Quick-change Equipment for Coremaking on Vibrating Molding Machines in Small-lot Production 101

Kril'shteyn, L. M. Mechanization of Mold Transfer From Assembly Line to Conveyor Belt 104

Zelichenko, G. S. Automated Lines for Molding and Shakeout in Foundry Shops 47

Poruchikov, Yu. P. Some Problems in the Automation of Charge Composing and Cupola Charging 106

18(5,7)
AUTHOR: Kremer, M.A., Engineer

SOV/128-59-7-9/25

TITLE: Simplified Method in Estimating Dimensions of Steel Castings' Risers with Exothermic Lining

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 7, pp 19-21 (USSR)

ABSTRACT: To calculate the growth of volume during work with exothermic materials the heat producing properties of this material have to be established. Commonly the work is done by means of cylindrical ingot molds. However some authors (K. Riemann in "Giesserei" Nr 19 1957) suggest also equiangular or oval molds. Their experiments have shown that oval shaped molds are best suited. Abroad (D. Atterton, K.F. Dimond in "Foundry Trade Journal", 1959, Nr 1987, 1988, 1990) only open-top molds are used. For their experiments the authors have used such molds too. The tables list the results on the determination of the growth rate (riser) and of the steel casting in connection with the effect of temperature of the exothermic material confirming the theory of Riemann (with a few exceptions). The

Card 1/2

Simplified Method in Estimating Dimensions of Steel Castings' Risers with Exothermic Lining

theory of D. Atterton and K.P. Edmonds on the meaning of the proportion between diameter of the growth and the thickness of the casting has not proved to be true. There are 2 diagrams, 4 tables and 5 references, 3 of which are English, 2 German and 4 Soviet

Card 2/2

KREMER, M.M.

18(0) SOV/128-59-8-27/29

AUTHOR: Averbukh, N.M.

TITLE: Leningrad Regional Conference on Progressive Foundry Practice

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 8, pp 46 - 48 (USSR)

ABSTRACT: December 8 - 12, 1959 a conference was held in Leningrad in order to exchange views on progressive foundry practice. About 700 persons participated. G.V. Malakhovskiy, the chief metallurgist of the Leningrad gradskiy Sovnarkhoz, gave a general picture of the foundry industry in the Leningrad economic region. M.M. Vyshemirskiy, the chief metallurgist of the Leningrad "Stankolit" plant, spoke about progressive methods in preparing cores and casting forms. M.A. Kremer, spoke on "New trends in the theory and practice of feeding castings". Yu.A. Nekhendzi reported on the 3rd Polish Foundry Conference. V.M. Bestopal described characteristics of Czech foundry processes. A.D. Goryachev (Kirov plant in Leningrad) described a new 200 ton press machine. I.A. Gerasimov (Kremenchug) reported on precision stamp casting

Card 1/5

Leningrad Regional Conference on Progressive Foundry Practice

in his factory. S.S. Yelistratov (Stalingrad) described a vacuum machine for feeding cores. I.T. Fedorova described a new drying process used for drying cores. The lectures of M.A. Kremer, K.V. Tolstikhina, P.I. Pankin, and P.I. Shportenko concerned the problems of exothermic mixtures. N.A. Tolpegin (Kirov plant in Leningrad) spoke about steel castings. I.A. Shapranov and A.A. Get'man (Scientific Research Institute) reported on an economic casting method using iron with a magnesium content; further they described a cupola furnace with a two-step heating. Ya. I. Medvedev (TsNIITMASh) spoke about gas blisters in castings and methods of elimination. O.A. Kozin ("Krasnoye Sormovo" plant) spoke on the classification of casting spoilage in manganese steel. P.P. Berg spoke on "New core materials". I.B. Kumanin (Steel Institute of Moscow) spoke about "Core materials and their influence upon castings". M.A. Kremer suggested the use of bitumin in sandblowing machines. I.V. Ryzhkov (Polytechnical Institute of Khar'kov) reported

Leningrad Regional Conference on Progressive Foundry Practice

on grey iron castings. Prokhorov ("Krasnoye Sormovo" plant) spoke of using liquid glass in cores for V, Cr, Ni and Mo steel castings. I.V. Gruznykh (Polytechnical Institute in Leningrad) reported about optimum parameters for core-blowing of liquid-glass-cores. P.I. Shportenko said that in the Novokrematorsk plant the removal of liquid-glass-cores was regulated by a dosage of clay, saw dust and waterless colors. S.I. Chernysh gave examples of quick drying mixtures. K.I. Shanskiy (Leningrad Plant for Hoist Transportation Equipment) stated that cupola furnace slag can be used as quick drying mixtures. B.A. Noskov and A.F. Nasapkin (Politechnical Institute of Khar'kov) reported on using of betonite mixtures for cores. V.F. Kryuchkov (Leningrad Mechanical plant) and Ya. V. Zeleranskiy (Machine-Building plant) hold about the transportation of core mixtures. L.M. Mariyenbakh spoke on "Improvement of melting agregates and of melting processes" and proposed using earth-gases for air-warming-machines. P.F. Sabaneyev (Rostsel'mash) spoke about the intention of the

Leningrad Regional Conference on Progressive Foundry Practice

plant to increase the output of grey iron. A constructive discussion took place after the theoretic lecture of B.A. Noskov and I.N. Den'gin (Politechnical Institute of Khar'kov) about the using of earth-gas in the furnace. Yu. G. Rozenberg and S.I. Tsukerman reported about the successful use of earth-gas in the furnaces of KhEMZ. L.N. Korchagina and R. I. Ketcheka discussed the use of such gas in the Rostov radiator plant and in the "Krasnyy Aksay " plant. On the subject of improved melting in Red China A.M. Petrishenko reported. I.I. Shapranova and E.V. Petrova (NII) informed on the modification of iron with magnesium under pressure. G.N. Golub spoke about using iron modified with magnesium in his plant . G.I. Koshovnik (Politechnical Institute of Kiyev) reported on the homogenization of magnesium iron during annealing. M.Ya. Zaslavskiy spoke about the production of grey iron at the Nevskiy Ship Repair Plant. "Increasing the Quality of Castings from Non-Ferrous metals" was the lecture of A.F. Kolobnev and N.I. Belousov (NII) in which they gave the characteristics of the new aluminum alloys (AV 30,

Leningrad Regional on Progressive Foundry Practice

AV 300, AMg7A a.o. I.P. Yegorenkov (NIILITMASh) mentioned in his lecture "Ways to Increase Labor Productivity during the cleaning and chopping of Castings", hydraulic methods of cleaning. V.L. Tarskiy (NIILITMASh) spoke about foreign equipment. M.A. Kremer informed on cleaning steel castings with a gas flame and air-arc method. V.M. Svirskiy mentioned the shortcomings of sand-blowing tools. M.Ya. Zaslavskiy (Lengiprorechtrans) introduced a simple hydro-sand-spurl machine. M.V. Bromley (All-Union Scientific Research Institute for Labor Protection VTzSPS) spoke on "Hygiene-Technical Requirements of the Plans and Building of Casting Shops". V.V. Kucheruk from the same institute raised the problem of labor protection during casting in shell-cores and when preparing the cores from the liquid-glass mixtures. O.A. Ratner (Leningrad Institute for Labor Medicine and Labor Hygiene) spoke about the prevention of silicosis. At the end decisions were taken to increase labor productivity.

PHASE I BOOK EXPLOITATION SOV/4199

Leningrad. Politekhnicheskiy institut

Sovremennyye dostizheniya liteynogo proizvodstva; trudy mezhvuzovskoy nauchno-tekhnicheskoy konferentsii (Recent Achievements in Founding: Transactions of the Scientific and Technical Conference of Schools of Higher Education) Moscow, Mashgiz, 1960. 336 p. Errata slip inserted. 4,000 copies printed.

Resp. Ed.: Yu. A. Nekhendzi, Doctor of Technical Sciences, Professor; Eds.: N. G. Girshovich, Doctor of Technical Sciences, Professor, and K. P. Lebedev, Docent; Managing Ed. for Literature on Heavy Machine Building (Leningrad Department, Mashgiz): Ye. P. Naumov, Engineer; Tech. Eds.: Ye. A. Dlugokanskaya, and L. V. Shchetinina.

PURPOSE: This book is intended for the technical personnel of foundries. It may be used by students of the field.

COVERAGE: This collection of articles discusses problems in founding processes. Individual articles treat the melting of metals and their alloys, mechanization and automation of casting processes, aspects of the manufacture of steel, cast iron, and nonferrous metal castings. No personalities are mentioned. References accompany individual articles.

12. Aksenov, P. N. Scientific Research Work of the Department of Founding Machinery and Methods of the Moscow Automechanical Institute 99

13. Kremer, M. A. Achievements in Casting Practice in a Fittings and Accessories Plant 105

14. Mysovskiy, V. S. Full Automation of the Centralized Mixture Preparation in Casting Shops 114

15. Poruchikov, Yu. P. Automation of Some Processes in Founding 123

III. MELTING OF METALS

16. Matveyenko, I. S. Cupola Melting Process With Oxygen Injection Into the Central Part of the Furnace 128

17. Baritov, M. A. Basic Trends in the Development of the Cupola Process in Metallurgy 140

Card 4/9

KREMER M.A.

KRAMER, P. A.

14

PHASE I BOOK EXPLOITATION SOV/5648

Sokolov, Aleksey Nikolayevich, ed.

Mekhanizatsiya i peredovaya tekhnologiya liteynogo proizvodstva (Mechanization and Advanced Processing in Foundries) [Leningrad] Lenizdat, 1961. 236 p. 2,000 copies printed.

Ed.: Ye. V. Yemel'yanova; Tech. Ed.: I. M. Tikhonova.

PURPOSE: This collection of articles is intended for technical personnel, foremen, and skilled workmen of foundries. It may also be of use to staff members engaged in the mechanization of production operations.

COVERAGE: The collection contains articles discussing the experience of a number of Leningrad plants and engineering and design organizations in mechanizing foundry processes and in applying advanced techniques to the manufacture of castings. No personalities are mentioned. Some

Card 1/5

articles are accompanied by references. References are all Soviet.

TABLE OF CONTENTS:

Foreword 3

Sverdlov, V. I. Mechanization and Automation of Foundry Processes 5

Zeleranskiy, Ya. V., M. S. Kashanskiy, and L. Z. Tsyganko. Pneumatic Transfer at Foundries 27

Zelichenko, G. S. Automatic Line for Molding and Shakeout 52

Zelichenko, G. S. Mechanization of the Cast-Iron Foundry at the "Elektrik" Plant 63

SOV/5648

Mechanization and Advanced (Cont.)

Sokolov, A.N. Mechanization of the Charging Operation in Electric-Furnace Steel Manufacture 77

Zeleranskiy, Ya.V. From Mechanization Practices in Foundries 99

Matveyev, V.N. Mechanization of Metal-Mold Casting 108

Dityatkovskiy, Ya.M., P.R. Kuratov, and V.N. Matveyev. Mechanized Drying of Cores by High-Frequency Currents 118

Dlugach, M.A. Making Small Steel Castings in Shell Molds 133

Kashanskiy, M.S., M.A. Kremer, and S.Ye. Tysovskaya. Rational Methods of [Flame] Trimining and Cleaning Steel Castings 152

Card 3/5

Mednikov, Z. G. Application of the Group-Processing Method in Making Blanks by the Die Casting and Die Forging of Molten Metal 160

Desnitskiy, V. P. (deceased). Heat-Resistant Steel Castings in Power-Plant Constructions 172

Kremer, M. A. Determination of Sizes and Economic Efficiency of Exothermic Risers for Steel Castings 188

El'tsufin, S. A. Cast Rotor Blades for Gas-Turbine Compressors 203

Tkachev, K. I. Experience in Developing and Using the Slot-Type Gating System 219

Mechanization and Advanced (Cont.) SOV/5648

Kononov, M. N. Patterns With an Epoxy-Resin Base 220

AVAILABLE: Library of Congress (TS233.S55)

Card 5/5

VK/wrc/bc
11-15-61

BELOV, Anatoliy Dmitriyevich; KREMER, M.A., red.

[Technology of smelting stainless steels with special industrial and operational properties] Tekhnologiia plavki nerzhaveiushchikh stalei s osobymi tekhnologicheskimi i ekspluatatsionnymi svoistvami. Leningrad, 1964. 28 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Liteinoe proizvodstvo, no.1)
(MIRA 17:7)

L 50190-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(w)/EWP(b) Pad IJP(c)
JD/HW/JG
AM6013200 BOOK EXPLOITATION UR/669.141.254669.15.194 30 17 Bt1

Kremer, M. A.

Intricate shape casting from alloy steels (Fasonnoye lit'ye iz legirovannykh staley) Moscow, Izd-vo "Mashinostroyeniye," 1964. 226 p. illus., biblio. 2800 copies printed.

TOPIC TAGS: casting, intricate shape casting, low alloy steel casting, medium alloy steel casting, high alloy steel casting, structural steel casting, heat resistant steel casting, wear resistant steel casting, casting production

PURPOSE AND COVERAGE: This book is intended for engineering personnel of foundries, laboratories, and design bureaus. It may also be useful to students of schools of higher technical education specializing in metallurgy. The book outlines the principles of alloying steel designed for intricate-shape castings and analyzes the effect of chemical composition, heat treatment, wall thickness and configuration of alloy steel castings on their structure and properties. The properties, use, and specific features of castings made of low-alloy, medium-alloy, and high-alloy structural, stainless, heat-, oxidation-, and wear-resistant steels are discussed at length. There are 337 references, mostly Soviet.

Card 1/4

L 50190-65
AM5013200

7

TABLE OF CONTENTS:

Foreword -- 3

Part I. Intricate-shape castings from low-alloy steel — 5
1. Basic purpose of alloying structural steel designed for intricate shape castings — 5
2. Castings from low-alloy silicon steel — 6
3. Castings from low-alloy manganese steel — 15
4. Castings from low-alloy nickel steel — 26
5. Castings from low-alloy chromium steel — 30
6. Castings from molybdenum and molybdenum-vanadium steel — 35
7. Castings from copper and copper-manganese-silicon, low-alloy steel — 40
8. Castings from vanadium steel — 46
9. Castings from low-alloy manganese steel containing two or more alloying elements — 47
10. Castings from low-alloy chromium steel containing two or more alloying elements; castings' properties, use and specific features of their fabrication — 56
11. Castings from nickel steel containing two or more alloying elements — 66

Card 2/4

L 50190-65
AM5013200

Part II. Intricate-shape castings from medium alloy steel — 68
1. Castings from steel with chromium-nickel base — 68
2. Castings from copper steel containing two or more alloying elements -- 96
3. Castings from chromium, chromium-molybdenum and medium alloy wear-resistant steel — 89
4. High-strength heavy and large-sized castings from medium-alloy steel with chromium-molybdenum and chromium-nickel base -- 91

Part III. Intricate-shape castings from stainless and acid-resistant steel — 98
1. Castings from stainless chromium steel — 98
2. Castings from acid-resistant steel with chromium-nickel base — 120

Part IV. Intricate-shape castings from heat-resistant steel — 157
1. General characteristics and classification of heat-resistant steels. Effect of chemical composition and structure on mechanical properties, heat and oxidation resistance of steel — 157
2. Castings from complex-alloy ferritic-martensitic steel with 12% Cr, their chemical composition, heat treatment conditions, mechanical properties and their use — 160

Card 3/4

L 50190-65
AM5013200

3. Castings from heat- and oxidation-resistant steel with austenite base, their properties and use — 154
4. Specific features of fabrication of oxidation and heat-resistant castings from steel with ferritic-martensitic or austenitic base — 179

Part V. Intricate-shape castings from steel with a high content of manganese — 189
1. Chemical composition, structural diagram, and specific features of austenitic steel with a high content of manganese — 189
2. Effect of chemical composition, melting methods, and heat treatment on the structure, mechanical properties, and wear resistance of castings from manganese austenitic steel — 191
3. Specific features of fabrication of castings from austenitic steel with a high manganese content in relation to their casting properties — 199

References — 213

SUB CODE: MM SUBMITTED: 03Nov64 NO REF SOV: 238

OTHER: 099

Card 4/4

RAGOZA, V.I., KREMER, M.F.

Management of labor in active tuberculosis [with summary in English]. Akush. i gin. 34 no.5:60-65 S-O '58 (MIRA 11:10)

1. Iz tuberkuleznogo otdeleniya rodil'nogo doma imeni prof. Snegireva (glavnyy vrach A.A. Dodor; nauchnyy rukovoditel' - prof. M.A. Petrov-Maslakov).

(LABOR, compl.
tubero., management (Rus))
(TUBERCULOSIS, in pregn.
labor management (Rus))

KREMER, M. KH.

KREMER, M. Kh

18(0) PHASE I BOOK EXPLOITATION SOV/1728

Akademiya nauk SSSR. Institut metallurgii

Sovremennyye problemy metallurgii (Modern Problems in Metallurgy) Moscow, Izd-vo AN SSSR, 1958. 640 p. 3,000 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Eds. of Publishing House: V.S. Rzhevnikov, and A.M. Dernov; Tech. Ed.: T.V. Polyakova.

PURPOSE: This book is intended for scientific and technical personnel in the field of metallurgy.

COVERAGE: This is a collection of articles on certain aspects of Soviet metallurgy. The book is dedicated to Academician Ivan Pavlovich Bardin on the occasion of his 75th birthday. The book is divided into seven parts. The first part consists of two articles presenting a brief account of the biography and professional activity of the Soviet metallurgist. It includes an article by John Chipman, Nicholas Grant, and John Elliott (M.I.T., USA) describing their meeting with Bardin in Moscow and also his visit to the United States. The second part consists of three articles and deals with raw materials and fuels for the Soviet metallurgical industry. The third part represents the major portion of the book. It consists of 25 articles dealing with the various aspects of the metallurgy of pig iron and steel. The fourth part consists of two articles treating the metallurgy of nonferrous metals. The fifth part consists of three articles on the forming of metals. The sixth part consists of eight articles discussing certain aspects of physical metallurgy. The last part deals with general problems in the field of metallurgy. References are given after each article. No personalities are mentioned.

TABLE OF CONTENTS:

Modern Problems in Metallurgy SOV/1728

Rudneva, A.V. [Candidate of Geological and Mineral Sciences], G.A. Sokolov, and N.L. Zhilo [Candidates of Technical Sciences], and I.I. Gul'tyay, [Junior Scientific Assistant, Metallurgical Institute imeni A.A. Baykov, AS USSR]. Effect of Alkalies on Phase Composition and Viscosity of Primary Blast Furnace Slags 136

Kulikov, I.S., I.Yu. Kozhevnikov, and L.N. Taylov [Metallurgical Institute imeni A.A. Baykov, AS USSR]. Equilibrium Distribution of Sulfur Between Pig Iron and Blast Furnace Slags 149

Kremer, M.Kh. [Doctor, Engineer, Corresponding Member of the East German Academy of Sciences, Berlin]. Some Problems in Ferrous Metallurgy in the GDR [German Democratic Republic] 163

Lüdemann, K.F., and G. von Struve [Institute of Ferrous Metallurgy of the Freiberg Academy of Mining]. The Problem of Metallurgical Processes in Low-shaft Furnaces 169

Card 5/12

KLEMEN, N. Ye., engr.

Plaster of Paris

Experience with the use of water-resisting ferry plaster of Paris. Mul. stroi. tekh. 10, No. 6, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

CHIGIRINSKIY, L.M.; KREMER, P.B.

Experience in the organization of a radiological department in an inter-district oncological dispensary. Med. rad. 9 no.11:45-48 N '64. (MIRA 18:9)

1. Volzhskiy mezhrayonnyy onkologicheskiy dispanser Volgogradskoy oblasti.

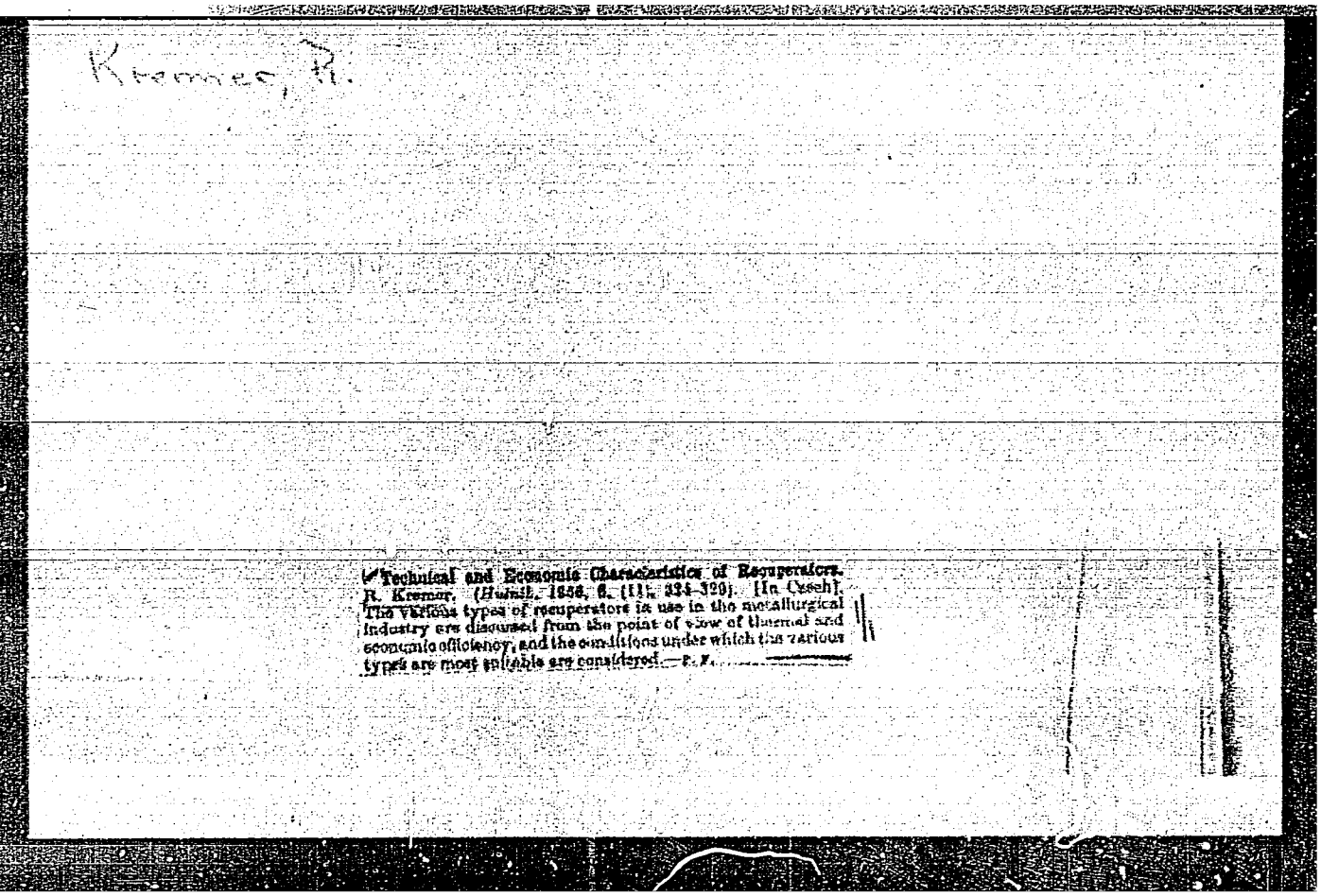
KREMER, P.B.

Evaluation of the leucocyte count in radiotherapy. Med. rad. 8 no.4:22-26 Ap'63 (MIRA 17:2)

1. Iz Volzhskogo onkologicheskogo dispansera (glavnyy vrach L.M.Chigirinskiy).

KREMER, R.

V 740. TECHNICAL AND ECONOMIC CHARACTERISTICS OF HEAT REGENERATORS. Kremer, R. (Hutnik, (Smelter, Prague), 1956, vol. 6, (9), 265-268). The thermal and economic efficiency of regenerators, particularly for use with open hearth furnaces, are discussed in relation to the most important characteristics of design and operating conditions. The author considers that metal recuperators will gradually displace regenerators. [S.I.]



Kremer, R.

Technical and Economic Characteristics of Regenerators. R. Kremer. (Hutnik, 1956, 6, (11), 324-329). [In Czech]. The various types of recuperators in use in the metallurgical industry are discussed from the point of view of thermal and economic efficiency, and the conditions under which the various types are most suitable are considered. — P. K.

KREMER, ~~RUDOLPH~~
RUDOLF

2

452c

13451* (Czech.) Possibility of Utilization of Heat During the Cooling of Open-Hearth Furnaces Možnosti využití tepla při chlazení Martinovych pecí. Rudolf Kremer. *Hutník*, v. 7, May, 1937, p. 152-157.

The great quantity of water required, and the large loss of heat in water cooling of open-hearth furnaces is discussed. Replacement of water cooling by an evaporation system with natural and forced circulation. New ways of utilization of heat by using liquids with high or low boiling point.

KREMER, R.

Technical-economic characteristics of boilers using waste gases.

p. 305 (VUTNIK) Vol. 7, no. 9, Sept. 1957,
Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

CZECH/34-59-6-11/23

AUTHORS: Kremer, R., Ing and Klika, R., Metallurgical Engineers

TITLE: Discussion of the Paper of Ing. Dr. Vl. Sedláček: "Determination of the Heating Time and its Practical Verification" (Diskuse k článku Ing. Dr. Vl. Sedláčka: Určení doby ohřevu a jeho praktické ověření)

PERIODICAL: Hutnické Listy, 1959, Nr 6, pp 512-513 (Czechoslovakia)

ABSTRACT: Doubts are expressed on the possibility of practical application of the method of calculation suggested by Vl. Sedláček. He does not calculate the heating time but determines which of four selected radiation coefficients correspond most closely to reality. In view of the numerous simplifying assumptions and the used method of experiments, these coefficients cannot be considered as being accurately determined and they can only be applied for calculating the heating time of titanium rods under the conditions pertaining to the particular experiments described in the paper of Sedlacek.

Reply of the author of the original paper, Ing. Dr. Vl. Sedláček.

It is pointed out that the method described in the

Card 1/2

CZECH/34-59-6-11/23

Discussion of the Paper of Ing. Dr. Vl. Sedláček: "Determination of the Heating Time and its Practical Verification"

original paper proved satisfactory at VÚK and enabled reducing considerably the heating times of titanium rods not only under experimental conditions but under normal shop conditions for over a year.
There are 5 references, all of which are Soviet (In the author's reply).

ASSOCIATION: VŠB, Ostrava

✓

Card 2/2

Z/034/61/000/004/001/005
E197/E335

AUTHOR: Kremer, Rudolf, Engineer, Candidate of Technical Sciences

TITLE: Automatic Control Project for Soaking Pits Based on Instant Balance Using a Computer

PERIODICAL: Hutnické listy, 1961, No. 4, pp. 259 - 263

TEXT: The increase of soaking pit output is the problem and the author suggests a new control system for the thermal process. The output of the soaking pit is the limiting factor in rolling-mill operation. Though soaking pits are already equipped with measuring and control instruments, their utilisation is not satisfactory. The measuring instruments provide information on fuel and air consumption, on temperatures and pressures at some points of the plant, and the control instruments (if operating at all) control some of the parameters but none provide information on the utilisation of the thermal process. Such information could well be obtained and used for control if correlated, and the author suggests a computer which calculates at suitable intervals the "instant deficiency of

Card 1/5

Automatic Control ....

thermal balance", abbreviated "instant balance". The author states that the method was successfully used by the Soviet VNIIMT for open-hearth furnaces and describes tests carried out for the purpose of adapting the method to soaking pits. These tests and the subsequent description define the method as consisting of calculating the amount of heat usefully transferred to the ingots by measuring at suitable intervals the heat entering and leaving the soaking pit, deducting from the difference the known losses of the pit. The thermal balance so obtained is the heat usefully absorbed by the charge and was expressed in local per m of ingot surface per hour. The exploratory test was carried out on a soaking pit of the type AMCO at VZKG, operating at 765 °C, with a charge of nine ingots of 4 tons each and a soaking period of 2.5 hours, the thermal balance being calculated every 15 minutes. Detailed numerical calculations are given, resulting in a useful heat transfer of 42 000 kcal/m^2h at the beginning, dropping to 20 000 kcal/m^2h at the end. The corresponding figures for open-

Automatic Control ....

hearth furnaces are 250 000 and 40 000 kcal/m^2h, in which case inaccuracies of up to ± 10% were found to be permissible. The thermal efficiency of the soaking pit during the test varied between 65 and 37%. It is proposed that the computer carry out all calculations, record and indicate visually for the benefit of operators how the heat transfer proceeds, as well as compare at intervals the actual value of useful heat transfer with the required value and adjust the inlet temperature, pressure and mass flow accordingly. A schematic circuit of the computer loop is given... Fig. 2 - circuit arrangement of the computer for automatic control of the thermal conditions of soaking pits based on the described principle. The meaning of the symbols is as follows: t_p - gas temperature, °C; t_{pece} - furnace temperature; t_v - air temperature; t_s - temperature of the combustion products; B - hourly fuel consumption; Q_v, Q_p, Q_s and Q_{ned} are, respectively - the heat values, kcal/h, of the pre-heated air, the fuel gas, the combustion products leaving the working space of the furnace and the heat

Card 3/5

losses by incomplete chemical combustion; q is the heat absorbed per unit area of the ingot.
Further project studies are proceeding.
There are 2 tables, 2 figures and 10 non-Czech references.

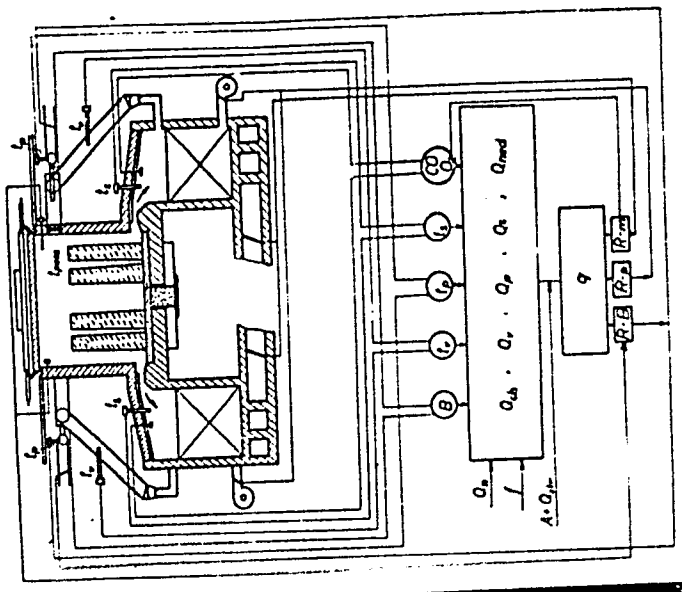
ASSOCIATION: VŠB, Ostrava

SUBMITTED: November 11, 1960

Z/034/61/000/004/001/005
E197/E335

Automatic Control ....

Fig. 2:



Obr. 2. Základní schéma zapojení počítacího stroje do automatické regulace tepelného řádu hlubinné pece na základě užitečně předaného tepla.

Card 5/5

KREMER, R.

"Calculation and design of noninertial furnaces" by M. A. Kuzmin. Reviewed by R. Kremer. Hut listy 16 no.12:905-906 D '61.

(Furnaces) (Kuzmin, M. A.)

KALOC, M.; KREMER, R.

"Metalurgical furnaces in the nonferrous metal metallurgy" by D. A. Diomidovskij. Reviewed by M. Kaloc and R. Kremer. Hut listy 16 no.12: 906-907 D '61.

(Furnaces) (Nonferrous metals) (Diomidovskij, D. A.)